



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/695,211	10/28/2003	Steven Gerard Ross	136122CT	4501

7590 04/18/2005

Patrick W. Rasche  
Armstrong Teasdale LLP  
Suite 2600  
One Metropolitan Square  
St. Louis, MO 63102

EXAMINER

HO, ALLEN C

ART UNIT	PAPER NUMBER
----------	--------------

2882

DATE MAILED: 04/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Ak

<b>Office Action Summary</b>	<b>Application No.</b> 10/695,211	<b>Applicant(s)</b> ROSS ET AL.	
	<b>Examiner</b> Allen C. Ho	<b>Art Unit</b> 2882	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 28 October 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 4-9 and 14-19 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3, 10-13 and 20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 February 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>102003</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Election/Restrictions*

1. Claims 1, 10, 11, and 20 are generic to a plurality of disclosed patentably distinct species comprising: species 1 corresponding to the embodiment shown in Fig. 5, species 2 corresponding to the embodiment shown in Fig. 6, and species 3 corresponding to the embodiment shown in Fig. 7. Applicant is required under 35 U.S.C. 121 to elect a single disclosed species, even though this requirement is traversed.

Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

2. During a telephone conversation with Dean D. Small (Reg. No. 34,730) on 13 April 2005 a provisional election was made without traverse to prosecute the invention of species 1, claims 1-3, 10-13, and 20. Affirmation of this election must be made by applicant in replying to this Office action. Claims 4-9 and 14-19 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

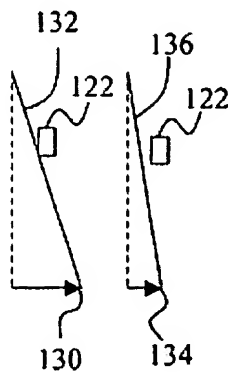
3. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the

Art Unit: 2882

application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

### *Drawings*

4. Figs. 4 and 5 are objected to under 37 CFR 1.83(a) because it is unclear how the collimator (62, 122) could form a rectangular aperture with only one cam. Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d).



Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the

Art Unit: 2882

renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### *Specification*

5. The disclosure is objected to because of the following informalities:

- (1) Paragraph [0031], line 7, "m" should be replaced by --y--.
- (2) Paragraph [0035], line 5, "cam" should be replaced by --blade--.

Appropriate correction is required.

### *Claim Rejections - 35 USC § 102*

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 1, 2, 11, 12, and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Hoffman *et al.* (U. S. Patent No. 5,799,057).

With regard to claims 1, 11, and 20, Hoffman *et al.* disclosed a CT imaging system comprising: an x-ray source (14); a collimator (52); and a detector (18); wherein the collimator has a curved contour proportional to a contour of the detector (column 4, lines 36-44).

With regard to claims 2 and 12, Hoffman *et al.* disclosed a CT imaging system in accordance with claims 1 and 11, wherein the curved contour of the collimator and the contour of the detector are concentric (about the focal point 50).

8. Claims 1, 2, 10-12, and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Swerdloff *et al.* (U. S. Patent No. 5,317,616).

With regard to claims 1, 10, 11, and 20, Swerdloff *et al.* disclosed a CT imaging system comprising: an x-ray source (12); a collimator (22); and a detector (50'); wherein the collimator has a curved contour proportional to a contour of the detector (column 4, lines 57-61).

With regard to claims 2 and 12, Swerdloff *et al.* disclosed a CT imaging system in accordance with claims 1 and 11, wherein the curved contour of the collimator and the contour of the detector are concentric (about the focal point 18).

### ***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 2882

10. Claims 3 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Swerdloff *et al.* (U. S. Patent No. 5,317,616) as applied to claims 1 and 11 above, and further in view of Okazaki (U. S. Patent No. 5,801,939).

With regard to claims 3 and 13, Swerdloff *et al.* disclosed a CT imaging system in accordance with claims 1 and 11. Although Swerdloff *et al.* disclosed a linear drive mechanism (32) configured to form an aperture of the collimator, Swerdloff *et al.* failed to disclose a piezo-electric drive mechanism configured to change the size of the aperture of the collimator.

Okazaki disclosed a precision positioning control apparatus comprising a coarse positioner (101) and a fine positioner (102). Okazaki taught a piezo-electric drive is capable of higher resolution than a coarse positioner (column 7, lines 27-36).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide a piezo-electric drive mechanism, since a person would be motivated to change the size of the aperture in finer increments.

### *Conclusion*

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

- (1) Ruchala *et al.* (U. S. Patent No. 6,618,467 B1) disclosed a CT system comprising a curved collimator.
- (2) Igarashi *et al.* (U. S. Patent No. 6,587,538 B2) disclosed a CT detector comprising a curved collimator.

Art Unit: 2882

- (3) Tybinkowski *et al.* (U. S. Patent No. 6,396,902 B2) disclosed a curve x-ray collimator.
- (4) Dobbs (U. S. Patent No. 5,668,851) disclosed a CT detector comprising a curved collimator.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Allen C. Ho whose telephone number is (571) 272-2491. The examiner can normally be reached on Monday - Friday from 8:00 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward J. Glick can be reached at (571) 272-2490. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Allen C. Ho  
Primary Examiner  
Art Unit 2882

14 March 2005